

REMARKS

Applicants thank the Examiner for issuing a thorough Office action that addresses all then-pending claims in detail.

By this Amendment, claims 1-42 are canceled without prejudice or disclaimer, and claims 43-68 are newly added. Therefore, claims 43-68 are pending in the application.

No new matter has been added.

Consideration and allowance of all claims are respectfully requested in view of the following remarks.

- Claims 1-42 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or under 35 U.S.C. § 103(a) as being obvious over *Gliner et al. '298* (U.S. Patent Application 2004/0158298). Applicants respectfully submit that these claim rejections are rendered moot by the present claim amendments.
- The following remarks are respectfully submitted for distinguishing newly added claims 43-68 over the art of record.

Gliner et al. '298

Gliner '298 does not teach or suggest a method that includes sequentially stimulating individual pairs of the electrodes until a first muscle contraction event is detected by the first EMG sensor, and assigning a one-to-one-correspondence between the detected muscle contraction event and a particular first one of the pairs of electrodes, as claimed in independent claim 43, where an electrode pair is defined as being any two immediately adjacent ones of the plurality of electrodes.

Rather, *Gliner '298* discloses a method that determines whether a given response to a present stimulation is an improvement over previous responses to previous stimulations, and then

designates a therapy electrode configuration as being optimized for a particular treatment; the optimization process 200 includes an evaluation procedure 240 that decides which therapy electrode configurations provide a more effective response (e.g., ¶35). FIGS. 4A and 4B, therein, each show two non-adjacent therapy electrodes being active; the associated description indicates that such non-adjacent two therapy electrodes may have their polarities reversed in a subsequent iteration of the process (e.g., ¶46).

By comparison, optimizing a configuration of therapy electrodes, as in *Gliner '298*, does not teach or suggest sequentially stimulating individual pairs of the electrodes until a first muscle contraction event is detected by the first EMG sensor, as claimed, but instead discloses testing the effectiveness of therapy electrode configurations (e.g., ¶35), and using two non-adjacent electrodes to test for an optimized polarity. Such does not disclose the claimed sequential stimulating, where the claimed process applies to pairs that are immediately-adjacent electrodes of a grid, and where individual pairs are stimulated. It follows that the claimed assigning step, being based on a particular configuration of pairs being stimulated, is also not taught or suggested by the previously-applied *Gliner '298* disclosure. Method claims 44-51 are patentable at least by virtue of their respective dependencies from independent claim 43.

Regarding subject independent claims 52, 55, and 62, Applicant respectfully requests the Examiner refer to the above remarks regarding claim 43. Computer program product claims 53-54 are patentable at least by virtue of their respective dependencies from independent claim 52, system claims 56-61 are patentable at least by virtue of their respective dependencies from independent claim 55, and cortical mapping system claims 63-64 are patentable at least by virtue of their respective dependencies from independent claim 62.

Regarding claims 65 and 66, *Gliner '298* does not teach or suggest any method or functions related to mapping discrete locations of a cortex to associated detections for muscle

contractions. An optimization or adjustment of stimulating for therapy treatment, as in *Gliner '298*, does not teach or suggest the claimed cortical mapping. Specifically, *Gliner '298* does not teach or suggest means for associating the detecting with the stimulating, thereby producing a map identifying at least one specific functional location of the cortex, in combination with means for notifying a user of the mapped functional identification in relation to discrete cortical locations being stimulated, as claimed in claim 65. In addition, *Gliner '298* does not teach or suggest a method step of detecting electromyographic events in response to a stimulation applied to the individual pairs of the subdural electrodes and utilizing the detected electromyographic events to map the cortex based on identification of the individual pairs as individual physical stimulation locations, as claimed in subject claim 66.

Further, *Gliner '298* is directed to uses of therapy electrodes and has an object of avoiding surgery (e.g., ¶12). The *Gliner '298* optimization process 200 can include a setup configuration storage in a database so that, after a subdural grid has previously been implanted in a patient, the system 100 can be used for many different types of neural therapies and procedures (e.g., ¶30) (emphases added). Such does not teach or suggest the claimed resectioning of subject claims 45 and 59, or any intraoperative use as claimed in subject claims 48 and 65. In fact, the *Gliner '298* reference teaches away from such use and is only directed to therapy and treatment. All of the embodiments disclosed in *Gliner '298* pertain to therapy.

Gliner et al. (U.S. Patent No. 6,959,215)

This reference, cited but not previously applied, only discloses a tremor treatment method where a patient is directed to stimulate a muscle, and then reducing an essential tremor by added stimulation (e.g., Abstract).

Amendment under 37 C.F.R. § 1.111
Application Serial No. 10/781,427

Madsen (U.S. Patent No. 6,091,979)

This reference, cited but not previously applied, only discloses an improved electrode grid, and does not disclose any use with EMG.

For the above reasons, Applicants respectfully request all claims be passed to issue.

Request for Interview

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly **requested to call** the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 10-0270.

Respectfully submitted,



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